Audi production: working without backache with the exoskeleton

- The device minimizes physical strain and boosts efficiency.
- Employees are testing the ergonomic aid at the Audi plants in Ingolstadt and Neckarsulm.

Ingolstadt, December 19, 2017 – Audi is working to eliminate backache at work with the help of an exoskeleton. This ergonomic aid provides support with lifting and carrying heavy material and reduces the strain on back muscles. Audi employees are testing the exoskeleton at selected workstations in logistics, the press shop and assembly at the plants in Ingolstadt and Neckarsulm.

The lifting aid is worn on the body and weighs approximately three kilograms. A metal frame with elements on the upper body, lower back and thighs is connected with a support structure. To fit the exoskeleton, the worker first pulls it over his or her head like a pullover and straps it to the hips. Two hand-sized plates that spread the load are then placed on the thighs.

The exoskeleton provides support especially with activities that require bending forward to pick up or put down components. Carrying heavy materials is also easier with this ergonomic construction, because it transfers the load of the heavy elements from the back into the stronger thigh muscles. This reduces the strain on the back by 20 to 30 percent and also promotes a healthy posture. The ergonomic construction helps the assembly workers in their daily work without restricting their freedom of movement. Thanks to the exoskeleton’s flexible structure and low weight, the workers can walk, turn and stretch as normal.

“Ergonomic working practices have high priority in all areas at Audi – including production and logistics of course. With the exoskeleton, or the ergoskeleton as we also call it at Audi, we promote healthy working conditions, avoid excessive strain and maintain our employees’ performance,” stated logistics planner and head of the ergoskeleton project, Vinzent Rudtsch.

At present, employees at the Audi plants in Ingolstadt and Neckarsulm are testing the first devices suitable for industry in various applications. In CKD (completely knocked down) logistics, the exoskeleton assists assembly workers when they take parts out of crates for example. In production, the exoskeleton eases the installation of the central console and the carrying of heavy material boxes. During the test phase, usage time gradually increased from two to seven hours each day during a day shift.
The pilot project is being supported by an interdisciplinary team of process and workplace planners and also medical experts. The tests are being carried out in collaboration with the manufacturer Laevo, which specializes in exoskeletons. The goal after the test phase is to integrate the device gradually into series production at all Audi plants worldwide. With the exoskeleton, Audi is supplementing its wide range of measures for ergonomically designed workplaces in production. Its employees’ health and wellbeing are already improved by aids such as the ergonomic assembly seat (the “chairless chair”) and wrist-friendly gloves (the “production orthosis”).

– End –